

Flightfax

ARMY AVIATION
RISK-MANAGEMENT
INFORMATION

FEBRUARY 1999 • VOL 27 • NO 2

<http://safety.army.mil>

A routine flight, just routine.

And then it happens.

This one's going in.

Once it does, will you
be able to get out
before a bad situation
gets worse?

DTIC QUALITY INSPECTED

DESTRUCTION STATEMENT E

Approved for public release;
Distribution Unlimited

19990219115

Training: The key to egress success

I'm still not sure exactly how it happened. The aircraft was performing perfectly, and the mission was going great. We'd even managed to get a couple of MILES kills on some OPFOR tanks. Then, suddenly, we were spinning out of control and descending rapidly through the trees. After a short but violent crash, the next thing I recall was looking over to make sure my copilot was okay. He appeared to be shaken—but okay.

Then, I smelled the fuel.

Despite my disorientation, I was cognizant enough to know we had to get out—and fast. If there were a fuel spill, there was a good chance that the aircraft was going to burn. And if the aircraft were going to burn, we had only a few precious moments to egress before we burned with it.

I reached down to unbuckle my shoulder harness and slipped out of the seat quicker than I could have ever imagined. I forgot to disconnect my ICS cord, but it broke away. As odd as it may sound, I was remembering our abbreviated crew briefing—we had agreed that "standard egress procedures" were in effect.

I slid out of the cockpit and, as I took my first step away from the aircraft, glanced back to make sure

my copilot was exiting the aircraft. I felt helpless as I realized he was still fumbling with a handle that wasn't going to open the door. At that very instant, I saw a bright-orange flash from the middle of the aircraft.

I turned away from the explosion and was literally thrown away from the aircraft. I knew my copilot wasn't going to make it. He died despite not being injured in the crash. My copilot died because he couldn't get out of the aircraft even though the emergency-release was functioning properly. He died because he didn't remember his egress procedures.

This tragedy, fortunately, didn't really happen. It does, however, illustrate a point that, unfortunately, is all too often overlooked. Survival in a crash sometimes boils down to a matter of seconds. You may someday find yourself in a position where you don't have time to think about "standard egress procedures in effect." Your life may depend on your ability to act without thinking. It may depend on your training.

Now think about it. When's the last time you practiced egress procedures? Was it last month? Was it last year? Have you ever

been in a unit that did any real training on how to rapidly exit the aircraft and what to do when you get out? How many times have you briefed "standard egress procedures in effect" without really thinking about what that means?

Emergency egress, although not found in chapter nine of your operator's manual, is one emergency procedure we cannot afford to ignore. When an aircraft is burning—or sinking, we'd better **know** what to do. We can't leave it to chance and "hope" we remember all the procedures. We can't afford to rely on mission briefings that are too generic to be of any use. We must plan egress training into our unit training (perhaps during safety stand-down days), and then test our ability to rapidly exit the aircraft.

Two videos that will help in emergency-egress training are available from installation film libraries or from the DAVIS web site at <http://dodimaging.afis.osd.mil>. Ask for—

■ "From Out of the Fire," PIN 710754.

■ "Flight Safety and Crash Survival," PIN 613660.

—MAJ Joe Blackburn, Aviation Systems & Investigation Division, DSN 558-9852 (334-255-9852), blackburj@safety-emh1.army.mil

Aviation crash-rescue video to be released

A new aviation crash-rescue video is in the final stages of production at the Army Safety Center. Taking each aviation system and going step-by-step through a rescue procedure, this video will familiarize aviation units and local fire and rescue departments with the basics—how to get into and out of aircraft through doors and emergency exits, what hazardous materials might be on board and where they are likely to be located, what's armed and how to disarm it, and how to correctly remove an unconscious pilot, crewmember, or passenger from the wreckage. The release of "Army Aviation Crash Rescue" (PIN 709717, TTV 20-1038) will be announced in *Flightfax*; watch for it. Upon release, the video will be available through local audiovisual facilities and from the DAVIS web site at <http://dodimaging.afis.osd.mil>.

Basic ditching techniques and procedures

Before you skip this article, thinking "Ditching? That doesn't apply to my unit's mission," think about this: Even if you don't *routinely* fly over open water, if you ever fly over any water—including lakes and rivers along your flight routes—you should keep yourself up to speed on the ditching techniques and procedures outlined in FM 20-151: *Aircraft Emergency Procedures Over Water*.

Ditching a helicopter should pose no serious problems since it can be landed with little or no ground speed and, therefore, negligible decelerative violence. However, without built-in flotation characteristics, the aircraft may sink rapidly, making timely egress a major challenge. Evacuation often cannot be started until rotors have come to a stop. In the meantime, cabin spaces are filling with water.

The following general recommendations are based on actual ditching experience in single-rotor helicopters without built-in flotation.

- At or just before water contact, jettison doors, windows, and emergency exits without unstrapping. Premature jettison can endanger aircraft control.

- Make a normal landing at zero ground speed into the wind and at minimum rate of sink. Avoid excessive tail flare; premature tail-rotor contact with the water may cause loss of antitorque control before the main fuselage settles in the water. If ditching under power, expect rotorwash to create substantial amounts of water spray, reducing visibility.

- Apply main-rotor brake (when available), and keep the aircraft level while rotor rpm decays. As the fuselage settles in the water, keep pulling pitch until the aircraft shows a tendency to roll. At that time, apply cyclic in the same direction so that water contact will stop the main rotor without violent reaction or the chance of flipping the aircraft in the opposite direction. If one side of the aircraft offers a preferable exit opportunity, roll the aircraft in the opposite direction before effective rotor control is lost.

- If you're ditching without power, remain strapped in (all occupants) until the main rotor has stopped and egress can begin. This will minimize disorientation with respect to the nearest exit regardless of aircraft attitude after submersion. If you're ditching with power, bring the aircraft to a hover, have all occupants egress, hover several hundred meters away from them, and ditch the aircraft.

Several videos on surviving in the water after ditching are available at installation film libraries and on the DAVIS web site at <http://dodimagery.afis.osd.mil>. Ask for—

- "Seconds To Live—Underwater Egress Training," PIN 606040
- "How To Survive In Water—Prepare To Ditch," PIN 30362
- "Helicopter Emergency Egress," PIN 113273

We all hope it'll never happen to us. But just in case, it's a good idea to review these procedures frequently. And in the event it does become necessary to ditch an aircraft, we'll be prepared and able to respond effectively and proficiently.





WAR STORIES

Ditching at sea

It was a beautiful night to fly—at least 90 percent illumination and not a cloud to be seen. I was flying from the left seat of the OH-58D in the flight-lead position. We were an hour and a half into the mission and on our way back to the ship.

I was using the sight to locate the ship when I felt the helicopter yaw right. I looked over at my right-seater's display and saw the engine-out warning light—no big deal, except when you're at 30 feet and 80 knots over water.

I knew that, without a doubt, on this night we were going to get wet. I remember thinking, "This is going to hurt," as I reached for the floor mic switch. I made the radio call, but I don't think it got out.

We hit the water tail low. The tail boom broke off, pulled the fuselage a little higher, and then everything was dark and wet. Somewhere in the process, I got hit in the face and broke my nose. I don't think I was ever unconscious, but I certainly had my bell rung!

I started swimming, but I wasn't going anywhere. And I couldn't figure out why. Then I remembered my HEED (helicopter emergency egress device) bottle,

put it in my mouth, cleared it, and took some air. Then I started swimming again, but I still didn't go anywhere. The air from the HEED had helped clear my head a little, and then I realized **I was still strapped in!**

I reached down, pulled the release, and immediately started rising. I wasn't sure how deep I was, and knowing that I had been breathing compressed air, I didn't pull my life preserver right away. I had been under water almost 2 minutes (believe me, that can seem like a very long time), and I knew that my HEED bottle was almost empty. Then I broke the surface. What a feeling!

The first thing I did was look around for my right-seater. I



located him and swam toward him. He had inflated his life preserver and was lying on the surface, but he wasn't moving. When I got to him, I started talking to him. He just handed me his radio and said, "I can't get this thing to work." I tried to call our sister aircraft with his radio, then I tried my own. I had so

much water in my ears, I couldn't hear an answer. I knew I was bleeding and that there were "things" in the water that would find us soon if we didn't get out. The problem was, I didn't know how badly my right-seater was hurt.

I had to make a choice—wait for our ship, which was at least 10 miles away, or let our sister aircraft pick us up, which could cause further injury to the other pilot. We had been in the water 10 to 15 minutes, and after considering the risks of staying in that water, I decided we had to take the chance and get out. I signaled the other aircraft and saw them drop the ladders.

My right-seater reached for his extraction strap. Still not knowing how badly he was hurt, I stayed with him until he was hooked up. In the process, I missed my ladder. Our sister aircraft did a quick pattern and brought the ladder right to me. I hooked up, they pulled me up out of the water, and I settled in for the flight to the ship. The aircraft came to a hover over the flight deck, and we were lowered to it and unhooked. The solid surface of that flight deck had never felt so good.

Beyond any doubt, the fact that we both survived this accident was due to the right training. Without the HEED bottle and the training to use it, without the dunker course and the egress training that goes with it, without our unit's combat search and rescue training, and without crew and team training, I wouldn't be writing this story. Someone else who saw what happened would be telling it for me.

—excerpts from an article by CW2 David B. Whalen, in the May 1992 Issue of Flightfax

HEED update

Today's constantly changing mission requirements place increased demands on Army aviators. They never know when they might have to fly an overwater mission. To mitigate the increased risk of overwater flight, the Army provides aviation life-support equipment (ALSE) for water survival. This equipment includes a life raft; life preservers (LPU-10, LPU-21, and the new LPU-34/P); and helicopter emergency egress devices (HEEDs) (SRU-36/P and, by FY00, SRU-40/P).

The HEED, known as "spare air" by the scuba community, is a self-contained underwater breathing apparatus. It's capable of providing 1 to 3 minutes of emergency breathing air depending on depth, water temperature, and the person using it.

HEED VERSIONS

The current version of the HEED, the SRU-36/P, consists of an aluminum alloy cylinder attached directly to a stainless steel regulator assembly with polycarbonate mouthpiece. It is 2 inches in diameter and just under 13.5 inches long, and it weighs 1.5 pounds fully charged to 1800 psi.

The new version of the HEED, the SRU-40/P, consists of an aluminum alloy cylinder attached to a first-stage regulator with pressure gauge, a 20-inch low-pressure rubber hose with twin swivel attachments, and a polycarbonate mouthpiece and second-stage regulator assembly. It is 2 inches in diameter and approximately 9 inches long, and it weighs 1.5 pounds fully charged to 3000 psi.

The Navy uses both versions,

which yield identical quantities of breathing air. The Army currently uses only the SRU-36/P; the SRU-40/P is being evaluated for Army use.

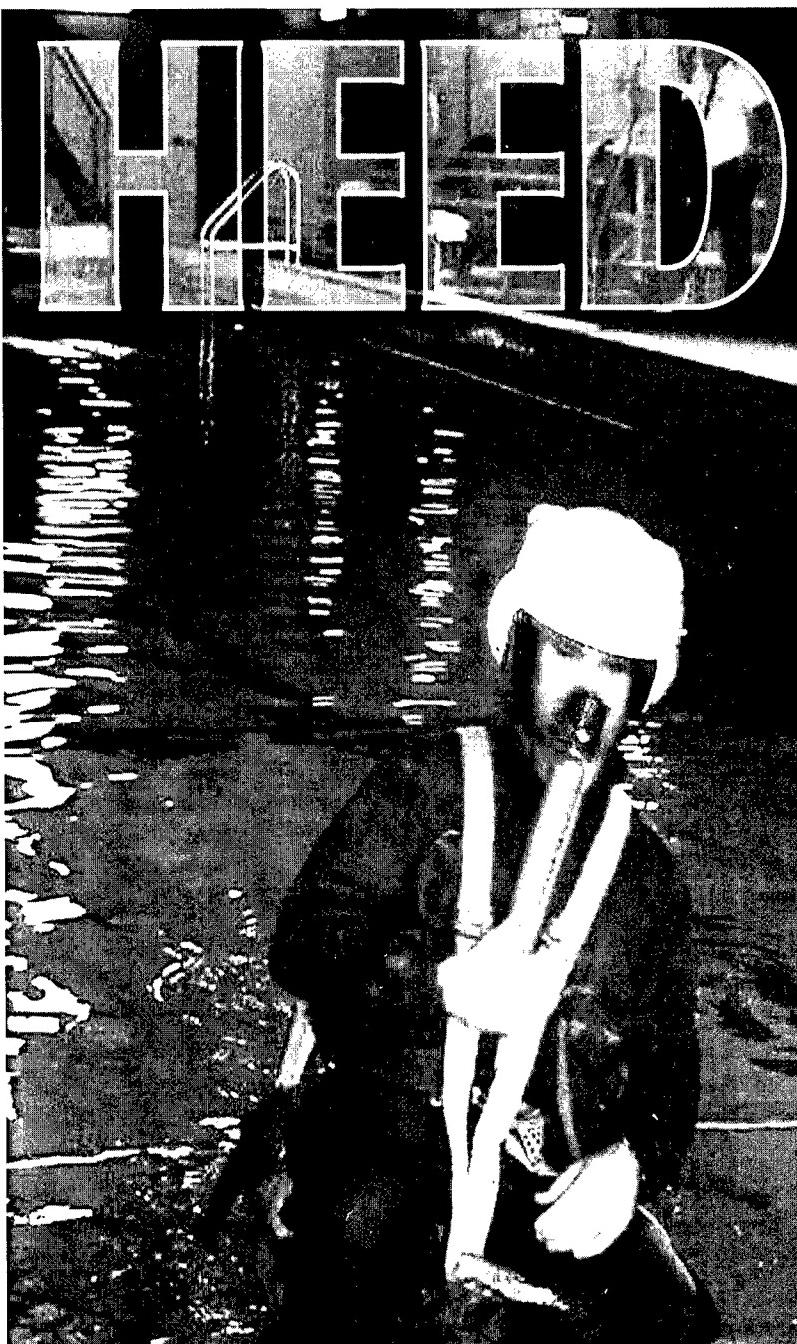
HEED TRAINING

Units that have the HEED must ensure that users are properly trained to use the device. As any scuba diver will tell you, proper training means the difference between life and death in the use of underwater-breathing equipment. It's like flight training—you can learn only so much out of the book. You must have hands-on training to develop the required level of skill necessary to safely operate the equipment. Use of a HEED without adequate training could have serious consequences, including an air embolism or lung damage.

In a water-crash

situation, users need to be trained to properly use the 1 to 3 minutes of breathable air in order to safely egress a submerged aircraft and swim to the surface.

During evaluation of the SRU-40/P HEED, it was determined that the current level of HEED training provided by the Army is



As any scuba diver will tell you, proper training means the difference between life and death in the use of underwater-breathing equipment.



inadequate to ensure that aircrewmembers can safely use the HEED to egress a helicopter.

In the past, the Navy has agreed to train Army personnel at Navy facilities. However, with reduced operational budgets, TDY costs associated with this training are becoming prohibitive. The special-operations community has possibly the only authorized HEED training program in the Army. The ALSE school at Fort Rucker currently provides a book course for HEED maintenance and training as part of the standard 5-week ALSE course curriculum.

In response to the dearth of HEED training in the Army, the SRU-40/P HEED Integrated Product Team (IPT) is developing a HEED training plan for the Army. The Navy is still willing to provide HEED training, so units that currently maintain HEED training via the Navy can continue to do so. Additionally, using special-ops and Navy training plans as a basis, the ALSE school is implementing a HEED training course that uses a shallow-water egress trainer (SWET) in a swimming pool. The SWET trainer is in place, and the

school is in the early stages of developing the training program. One concept is to train ALSE technicians in HEED operation so they can go back to their units and implement a water training program. Such programs can be as simple as having aircrewmembers wear a flight suit and jump in a swimming pool and practice using the HEED in the water.

HEED MAINTENANCE

Another problem was discovered during SRU-40/P HEED evaluation. The Army doesn't have the capability to refill or top-off the HEED.

In response to this need, the SRU-40/P HEED IPT is evaluating a breathable-air compressor and the Navy's HEED refill station (CQU-10/P). Additionally, the IPT is evaluating the following maintenance concept. Units that have access to a local dive shop or a co-located Navy facility can refill their HEEDs at commercial or Navy facilities. Units that don't have such access, particularly OCONUS units, can set up organic support by putting a breathable-air compressor at the AVIM level and a HEED refill station at the AVUM level.

The HEED refill station consists of an air cylinder in an aluminum stand with pressure gauges, on/off valve, and air fill adapter. When the air cylinder in the refill station is incapable of refilling the HEED, it can be removed and taken to the AVIM compressor to be refilled. The AVIM could keep a small pool of filled air cylinders on hand. When the AVUM(s) bring in depleted air cylinders, they can immediately receive a filled air cylinder.

SUMMARY

Addressing these problems prior to fielding the SRU-40/P will resolve many of the current supportability problems associated with the HEED. In addition, the IPT is looking toward the future. The HEED is a component of the Air Warrior system. This ground work in the areas of training and support for the HEED will help pave the way for the introduction of Air Warrior to Army aviation. The Air Warrior system will be a mission-tailorable, integrated ensemble that will permit Army aircrewmembers to respond to contingencies over land or water.

—Mr. Al Dassonville, Project Director,
Project Manager Soldier, Fort Belvoir, VA,
DSN 654-1346 (703-704-1346),
adasson@pmsoldier.belvoir.army.mil

HEED inspections

It's dark. You're under water. You're disoriented. Your helicopter is sinking.

This is not a good time to discover that your HEED doesn't work. It's part of your survival equipment—but it can't help you survive if it doesn't work.

To ensure it'll work when you need it, you should make it a practice to inspect your HEED before and after each flight.

PREFLIGHT

- Visually inspect the device for external damage.
- Inspect the mouthpiece assembly for security and cleanliness.
- Turn the ON/OFF valve to the ON position and check the device for operational charge. The indicator pin should be flush with or above the green notch.
- Manually purge the regulator by momentarily depressing the purge button. Air should be released from the regulator (indicated by a continuous audible hiss from the mouthpiece assembly).
- Ensure the HEED is properly secured to the SRU-21 survival vest.
- Return the HEED for replacement or repair if you find discrepancies.

Note: *The HEED should remain in the ON position during flight. The indicator pin must be flush with or above the green notch during flight.*

POSTFLIGHT

- Check the pressure indicator to ensure that the pin is above the green notch.
- Turn the ON/OFF valve to the OFF position.
- Depress the purge button until the airflow stops.
- Inspect the device for external damage.
- Inspect the mouthpiece for cleanliness and security.
- Inspect the regulator for signs of salt air and water contamination and cleanliness.
- Return the HEED for replacement or repair if you find discrepancies.

And remember, any missing part following flight can be an FOD hazard. Even a small part from your HEED could lead to disastrous results if it finds its way into critical aircraft components or flight controls.

Neglecting your preflight and postflight inspections could lead to this lifesaving device failing you at a most critical time—when it's dark and you're under water and you're disoriented and your helicopter is sinking.

Make sure it doesn't happen to you.



AIRCREWS
TALKING
TO EACH
OTHER

CREW COMMO

Obstacle avoidance and aircraft acquisition

I'd like to share some observations I've made over my short 9-year Army aviation career as a Black Hawk driver. These points may appear to be small, but it's the small things that tend to get us.

Have you ever asked your copilot or crew chief to clear the aircraft prior to turning to their side? Of course you have. But how many times have you seen that person actually looking outside

before replying, "Clear"?

I have noticed that some pilots and crew chiefs, including myself, sometimes give only lip service to clearing the aircraft. Usually it happens when we are burdened with a heavy cockpit workload and our situational awareness is less than optimal.

We owe it to ourselves, our crewmates, our passengers, and our families to prioritize cockpit duties and put aircraft clearance first. Take the time to scan the area that lies close in and then extend your scan to the horizon before announcing that it is safe to turn. This technique will ensure that the area will be free of hazards to your flight path.

Another thing I've noticed is the difficulty crewmembers sometimes have in detecting other aircraft in flight. Usually movement across our field of view is the most noticeable indication that there is something out there. But did you know that two aircraft on a converging flight path, assuming both aircraft maintain a steady course and similar speed, will cause the position of the other aircraft to remain stationary on the pilot's windshield? This

condition is worsened if the other aircraft is blocked from the pilot's sight by a windshield support column—or the copilot's map.

Aircraft converging head-on have similar problems; the approaching aircraft appears stationary when viewed through the windshield. The retinal image size, or the observed size of the object, will grow in relation to the speed at which the aircraft are converging. The faster the speed, the less time available to detect the other aircraft and avoid a collision.

Scanning is the best defense in both these situations. Frequent movement of the eyes keeps the most acute portion of the eye, the fovea, searching the skies for possible conflict. Movement of the head and body will also allow the crewmember to see around obstructions to sight—like that copilot's map!

We must always be looking for other aircraft and possible obstructions to our flight path. Remember that we are only as good as our last flight, and that flight could have been better.

—CW3 Scott C. Miller; D Company, 158th Aviation; CMR 408, Box 894; APO AE 09182; scmlam@aol.com



Y2K-compliant data system almost ready

Over the past 18 months, we at the Safety Center have been working hard to replace the accident database with a new system that is year-2000 (Y2K) compliant. Our primary focus is to improve your ability to get the information you need. The new system is expected to be operational by 2 February 1999. However, this will involve taking the old Safety Center database server (Army Safety Management Information System (ASMIS)) off-line and bringing the new database server on-line. The result is that, **as of 2 February 1999, you no longer have access to the Safety Center database using the ASMIS Retrieval and Processing System (ARPS).**

You will be able to access the

new accident database through a series of user tools placed on the Risk Management Information System (RMIS) at:

<http://rmis.army.mil>.

These tools, which functionally represent known information requests to the Safety Center, will be located under a button called "Database." We realize that there will be additional information requirements not currently covered by this initial set of tools. As a result, your feedback is now more important than ever.

If you can't find what you need, have a good idea, have a problem with our web sites, or are totally confused, all you have to do is e-mail us at:

helpdesk@safety-emh1.army.mil or call DSN 558-1390 (334-255-

1390) and let us know what you need. Ms. Reta Dyson or Mr. Junior Kelley will try to find a solution to your problem.

If it's been a while since you visited us—or if you never have—it's time to take a look for yourself. The user tools should be completed by the time you read this, so pay us a visit at:

<http://rmis.army.mil>

or <http://safety.army.mil>

and keep up to date on what's happening in Army safety. If you have problems getting an RMIS password, contact Ms. Jewnita Clark at DSN 558-3889 (334-255-3889), clarkj@safety-emh1.army.mil.

Keep in touch. We're constantly updating our site so we can meet your needs and expectations.

We want to hear from you

Because the cost of accidents is paid in lives, dollars, and readiness, we cannot afford to learn every lesson first-hand; we must learn from each others' experience whenever we can and share what we know with each other.

Our No. 1 request from *Flightfax* readers is for more first-person and lessons-learned articles. And that's the idea behind "War Stories," a recurring feature in *Flightfax* (page 4). The purpose of this column is to provide a forum for the entire Army aviation community to learn from each others' experiences and to share how risk management works in real-world Army aviation operations.

"Crew Commo," another

recurring feature in *Flightfax* (page 8), gives aircrews—and other aviation personnel, for that matter—an informal forum in which to communicate with each other. We hope to hear from all of you—including maintenance personnel—on issues regarding safety and risk management in Army aviation.

We make it easy to contribute. Just a couple of notes so that everybody understands the deal:

- Space in *Flightfax* is limited, so please be as brief and to the point as possible.

- We won't be publishing items that are submitted anonymously, but we will keep your identity confidential if you say so. It's the lesson, after all, that's important.

- If we edit your story for

length or clarity, we'll get your approval before publishing the revised version.

That's pretty much it. You can contact us by—

- Phone: DSN 558-2676 (334-255-2676)

- Fax: DSN 558-9478/9528 (334-255-9478/9528)

- E-mail: flightfax@safety-emh1.army.mil

- Mail: Commander, U.S. Army Safety Center, ATTN: CSSC-OA (*Flightfax*), Bldg. 4905, 5th Ave., Fort Rucker, AL 36362-5363

Please let us know how we can serve you better; we truly want to know. And we look forward to working with you as you contribute to Army aviation safety through *Flightfax*.

—Sally A. Yohn, Editor, *Flightfax*, DSN 558-2676 (334-255-2676), yohns@safety-emh1.army.mil

Accident briefs

Information based on preliminary reports of aircraft accidents



Class E F series

■ Upon touchdown from 3-foot hover, No. 2 hydraulic pressure light came on, followed by failure of pitch and roll SCAS. Caused by failure of hydraulic pressure switch.

■ During simulated engine failure at altitude, rotor and engine needles did not split. During autorotative descent, power returned to normal operational rpm, and aircraft landed without incident. Maintenance found that rotor rpm was not set for current environmental conditions and adjusted main-rotor pitch-change links.



Class C A series

■ Crew heard squealing noise during low-level training. During descent for precautionary landing, crew noted smoke and "fire APU" master caution light came on. Crew activated APU fire pull handle, deactivated ECS, and landed without further incident. Inspection revealed separation of APU drive shaft from PTO drive clutch and APU drive shaft and associated APU component damage.

■ Damage to No. 2 main-rotor blade was discovered during preflight. Maintenance had been performed on aircraft 7 days earlier for replacement of No. 2 main-rotor blade and lead/lag-link bearing. It was determined that phenolic block and associated retaining/quick-release pins and tools installed between pitch housing and main-rotor hub to prevent blade droop during maintenance had not been removed. Aircraft had been flown on two missions before phenolic block and pins were discovered. Phenolic block was found wedged in rotor's pitch housing and was cracked where the second pin is normally inserted. Also found was apparent subsequent damage to No. 2 main-rotor blade.

Class E A series

■ Crack was found in doppler antenna shroud during postflight inspection. Suspect that, during pinnacle landing, aircraft settled in soft earth and antenna shroud settled on top of rock.

■ Pressurized air became weak and shaft-driven compressor (SDC) caution light came on during approach to landing. Crew landed and, during shutdown, psi accessory pump caution light came on. Postflight inspection revealed that transmission oil level was zero, with oil pooling beneath aircraft. Maintenance replaced SDC.

■ Crew noticed uncommanded left yaw and smelled burning odor in cockpit during cruise flight. Crew executed immediate descent for landing at airfield. During approach, oil psi accessory caution light came on. Caused by SDC failure.

■ Fuel cap and panel were found missing during hot refueling. Suspecting that the refuel panel was left off during a previous refuel, crew conducted ramp search and discovered cap and panel at an adjacent refuel point. Inspection revealed no damage, and cap and panel were replaced.

■ Crew noticed burning odor during ground taxi, but there was no smoke, popped circuit breakers, or caution/warning lights. Aircraft returned to parking. During APU start for shutdown, shaft-driven compressor (SDC) caution warning light would not extinguish. Aircraft was shut down without incident, and SDC was replaced.

■ During runup, No. 1 generator caution/warning light illuminated. Generator could not be reset. Aircraft was shut down without incident, and generator was replaced.



Class C D series

■ During slingload operations, rear hook failed to release slingloaded HMMWV after it was set down on

ground. As aircraft continued to move forward, HMMWV was dragged until hook finally released. HMMWV was extensively damaged; no damage to aircraft.

Class E D series

■ No. 1 engine fire light came on during runup. Maintenance replaced fire-sensing element, and aircraft was released for flight.

■ Combining transmission right-hand debris screen latch indicator tripped six times during traffic-pattern flight and would not reset the sixth time. Upon landing, maintenance cleaned debris screen and drained and flushed gearbox. Oil sample returned normal, and aircraft was released for flight.



Class A D(I) series

■ Aircraft hit trees while crew was screening for ground elements during squadron exercise evaluation. Aircraft landed upright with extensive main- and tail-rotor and structural damage. Both crewmembers were injured. Investigation is under way.

Class E C series

■ During IGE hover work at improved landing strip, aircraft was at 10 feet agl and 5 knots forward airspeed when crew spotted wire at eye level. Wire disappeared into upper WSPS, and crew immediately landed and shut down. Inspection revealed no damage.

■ During low-level flight, engine had compressor stall. Aircraft landed without incident.

D(I) series

■ Low oil pressure transmission caution message displayed during NVG flight. Caused by loose nut on oil return line at freewheeling unit.

■ During running fire of .50-caliber machinegun, copilot's chin bubble shattered.

TH67



Class E A series

■ During VMC approach to landing, bird dove and struck vertical fin. Aircraft continued approach to landing, and landed without further incident. Postflight inspection revealed damage to vertical fin.

■ Suspected compressor stall occurred during rpm recovery after hovering autorotation. Aircraft landed without incident. Maintenance could not duplicate on test flight.

UH1



Class E H series

■ During takeoff, aircraft encountered flock of birds. Aircraft was landed and inspected for damage. Bird strikes were evident, but no damage was found.

■ Crew felt hydraulic stiffness in upper right quadrant during takeoff. Performance of emergency procedures momentarily returned control response, but then stiffness came back. Crew returned to home base, where maintenance replaced magnetic brake and adjusted rigging of lateral cyclic flight controls.

V series

■ During short final, crew chief smelled fuel odor when he opened passenger door to clear aircraft. Postflight inspection revealed fuel line between fuel cell and fuel manifold was seeping.

UH60



Class B A series

■ Three main-rotor blades sustained damage beyond repair during NVG hoist medevac operation. Damage was discovered during daylight the following day. Cause not reported.

Class C L series

■ MTP experienced rapidly decreasing oil pressure on No. 2 engine while in "fly" position and immediately initiated engine shutdown. Postflight inspection revealed that 5 to 6 quarts of

oil had leaked from the No. 2 engine and spilled onto aircraft and parking pad. Damage was confined to No. 2 engine. Prior to incident, No. 2 engine hydro-mechanical unit had been replaced. Upon completion, retaining nuts had not been reinstalled on accessory gearbox shaft cover, nor had maintenance action been recorded on applicable forms.

Class E A series

■ No. 2 engine failed as aircraft touched down during normal approach. Emergency shutdown was performed. G-axis and cross-bleed air tube on No. 2 engine were replaced.

■ During MTP training auto-rotation, No. 1 engine shut down after returned to fly. Engine was restarted in flight using APU, and aircraft landed without incident. Maintenance replaced No. 1 engine P3 hose and tube assembly.

■ During local orientation flight, No. 1 hydraulic pump failed. Hydraulic pump was replaced.

■ Aircraft struck large buzzard with the advancing half of a main-rotor blade during cruise flight. Aircraft continued about 10 miles to destination and landed without further incident. Damage was found to one main-rotor-blade tip cap.

■ During final approach, No. 2 engine developed unusual noise, followed by master caution and tgt indications in excess of 1000°C. Crew landed immediately and performed emergency shutdown of No. 2 engine. Suspect internal failure of No. 2 engine.

■ Just after takeoff, nose of aircraft pitched downward uncommanded. About 10 minutes later, while in IMC, aircraft began porpoising in pitch axis, and crew noted unusual aircraft vibration. When pilot attempted to correct porpoising by moving cyclic, cyclic would barely move. PC took controls and confirmed that cyclic was very stiff. He elected to descend to VMC and performed precautionary landing. Aircraft failed flight-control breakout check during postflight inspection. Maintenance suspected water/ice in flight control bearings. After swashplate and mixing unit were lubricated, flight controls operated normally.

■ Aircraft experienced unusual attitude inputs through the flight

controls during cruise flight. Aircraft landed without incident. Maintenance could not duplicate condition, and aircraft was released for flight.

C12



Class E D series

■ Nos. 1 and 2 avionics master circuit breakers tripped in cruise flight, resulting in loss of all navigation and communications capability. Circuit breakers would not reset. Crew was able to use dead reckoning to descend in VMC to first suitable airport, and landing was made without incident. Caused by faulty d.c. crowbar assembly.

F series

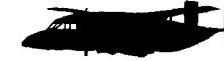
■ Crew heard loud crash during cruise flight and simultaneously noticed the pilot's inner windshield was shattered. After emergency landing at nearby airport, windshield was replaced.

■ While climbing through 23,000 feet with ice vanes extended and props at 1900 rpm, right engine emitted loud bang and failed. Flames were observed coming from exhaust-stack area. Engine was secured IAW emergency checklist for in-flight engine failure, and uneventful single-engine landing was made at airport.

R series

■ Engine chip light came on in cruise flight. Single-engine flight was available, and engine was shut down. Single-engine landing was made back at home station without incident. Maintenance inspection of chip plug revealed metal chunks and fuzz.

C23



Class E B series

■ When IP attempted to retract landing gear after takeoff, handle would not move. Gear was left down, and aircraft returned to airfield and landed without incident. Inspection determined that weight on wheels switch striker plate had shifted, causing aircraft to sense that it was on the ground, thus not allowing gear to retract. Plate was rebonded to left-main landing gear.

Aviation messages

Recap of selected aviation safety messages

Aviation safety-action messages

AH-64-99-ASAM-02, 011502Z Dec 98, informational

There have been AH-64A and UH-60L on-ground flameouts that have been attributed to the overspeed and drain valve (ODV). The flameouts usually occur just as power control lever is moved from "fly" to "idle." Other factors associated with the incidents are that the aircraft has been on the ground and at flat pitch for a period of time. To date, there have been no in-flight shutdowns. The purpose of this message is to inform users of corrective actions to preclude ODV-related flameouts.

AMCOM contact: Mr. Howard Chilton, DSN 897-2068 (256-313-2068), chilton-hl@redstone.army.mil

OH-58-99-ASAM-01, 141325Z Dec 98, maintenance mandatory

The mast-mounted sight upper shroud assembly contains six clamps that hold the upper and lower shrouds together. Field reports indicate that certain

clamps will remain loose even after required torque is applied to bolts. This message requires a one-time inspection for suspect clamps and to verify correct installation of threaded insert.

AMCOM contact: Mr. Ron Price, DSN 788-8636 (256-842-8636), price-sf@redstone.army.mil

UH-1-99-ASAM-02, 091320Z Dec 98, maintenance mandatory

ASAM UH-1-98-03 directed a one-time inspection of all UH-1 tail-rotor control tubes to remove parts manufactured by Master Swaging. This inspection was to be performed no later than 31 December 1998. The purpose of this message is to extend that requirement to 30 June 1999.

AMCOM contact: Mr. Robert Brock, DSN 788-8632 (256-842-8632), brock-rd@redstone.army.mil

UH-60-99-ASAM-04, 011502Z

Dec 98, informational

See AH-64-99-ASAM-02 above.

AMCOM contact: Mr. Ed Goad, DSN 897-2095 (256-313-2095), goad-er@redstone.army.mil

UH-60-99-ASAM-05, 071608Z Dec 98, maintenance mandatory

Certain spindle bearing assemblies procured under a spares contract initially did not include the sleeve bearing, P/N SB5203-202. This message requires a one-time inspection of the spindle bearing assembly, P/N 70102-08100-044/056, for the presence of the sleeve bearing.

AMCOM contact: Mr. Ed Goad, DSN 897-2095 (256-313-2095), goad-er@redstone.army.mil

UH-60-99-ASAM-06, 101503Z

Dec 98, maintenance mandatory

Certain pitch horns, P/N 70102-08111-047, failed to pass fatigue tests. This message requires a one-time inspection to locate the pitch horns specified in paragraph 7 of the message and to establish a reduced retirement life of 2500 hours for those horns.

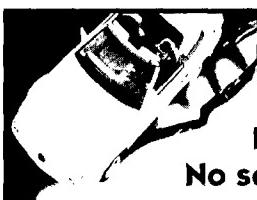
AMCOM contact: Mr. Ed Goad, DSN 897-2095 (256-313-2095), goad-er@redstone.army.mil

Safety-of-flight message

AH-1-99-SOF-03, 141510Z Dec 98, technical

This message requires a one-time inspection for and removal of suspect scissors lever assemblies manufactured by Imperial Tooling and Machine Company.

AMCOM contact: Mr. Howard Chilton, DSN 897-2068 (256-313-2068), chilton-hl@redstone.army.mil



POV fatality update through December

Speed ◊	Fatigue ◊	No seatbelt ◊	No new causes, just new victims	FY98	FY99
				26	37

IN THIS ISSUE

- Training: The key to egress success 2
Aviation crash-rescue video to be released 2
Basic ditching techniques and procedures 3
Ditching at sea (WS) 4
HEED update 5
HEED inspections 7
Obstacle avoidance and aircraft acquisition (CC) 8
Y2K-compliant data system almost ready 9
We want to hear from you 9

WS • War Stories. CC • Crew Commo. SF • Shortfax

Class A Accidents

through December

4TH QTR	Class A Flight Accidents		Army Military Fatalities	
	98	99	98	99
October	2	1	0	0
November	1	1	0	2
December	2	1	2	0
January	1		0	
February	1		0	
March	1		0	
April	0		0	
May	1		0	
June	2		4	
July	1		0	
August	0		0	
September	0		0	
TOTAL	12	3	6	2



U.S. ARMY SAFETY CENTER

Flightfax is published by the U.S. Army Safety Center, Fort Rucker, AL 36362-5363. Information is for accident-prevention purposes only and is specifically prohibited for use for punitive purposes or matters of liability, litigation, or competition. Address questions about content to DSN 558-2676 (334-255-2676). Address questions about distribution to DSN 558-2062 (334-255-2062). To submit information for publication, use fax 334-255-9528 (Ms. Sally Yohn) or e-mail flightfax@safety-emh1.army.mil Visit our website at <http://safety.army.mil>

Charles M. Burke
Brigadier General, USA
Commanding